# Auburn St @ Commonwealth Ave

Proposed MassDOT intersection improvements

January 14, 2021
Public Information Meeting

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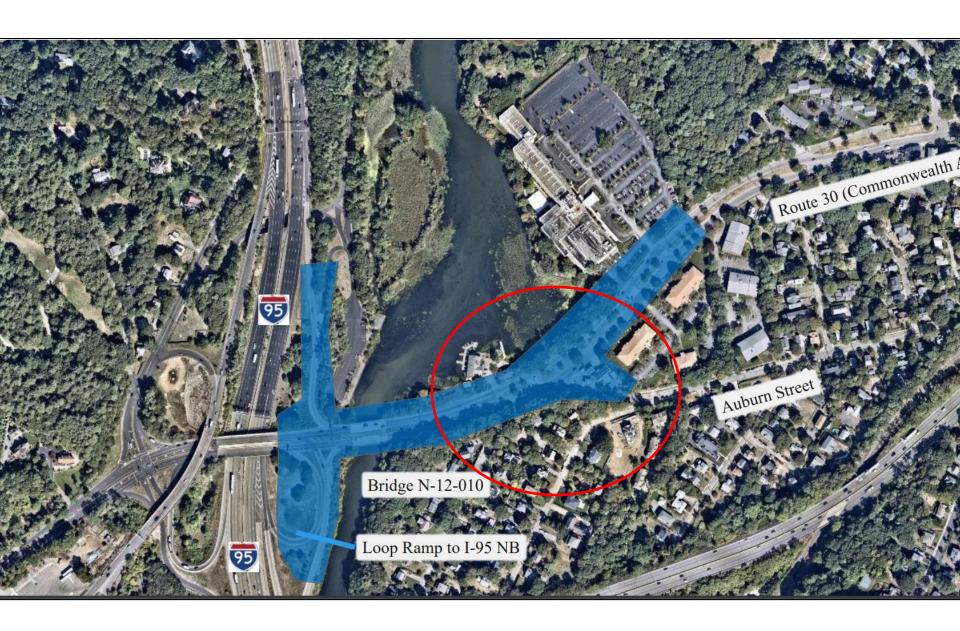
# Agenda

- 1. Introduction
- 2. Alternatives Analysis
- 3. About Roundabouts
- 4. Preliminary Questions Answered
- 5. Timeline & Next Steps
- 6. Questions & Comments

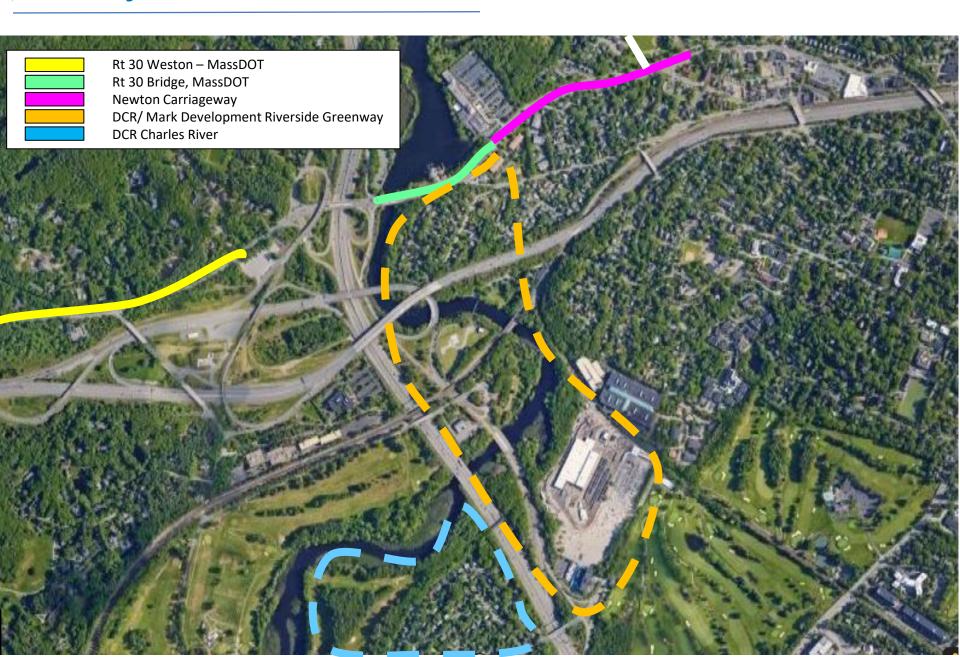


# 1. Introduction

# MassDOT Bridge Project Limits



# **Project Context**

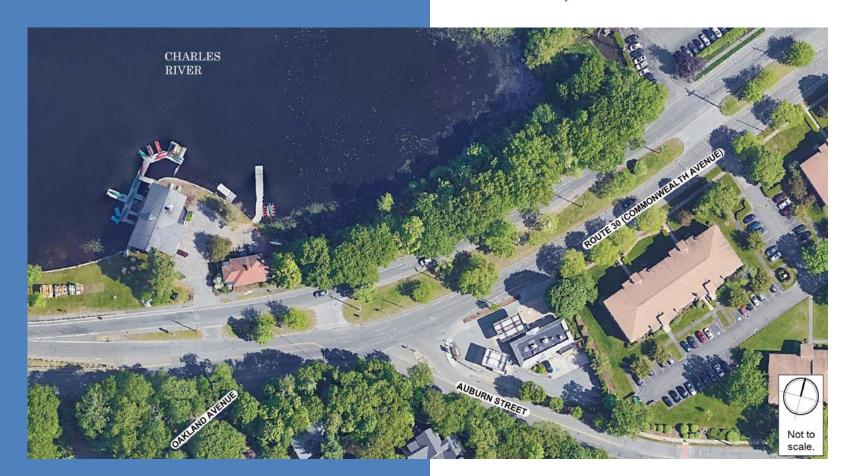


### City Vision

- Safety
- New open space
- Bike & ped accommodations
- Network connectivity
- Increased access to river & boathouse



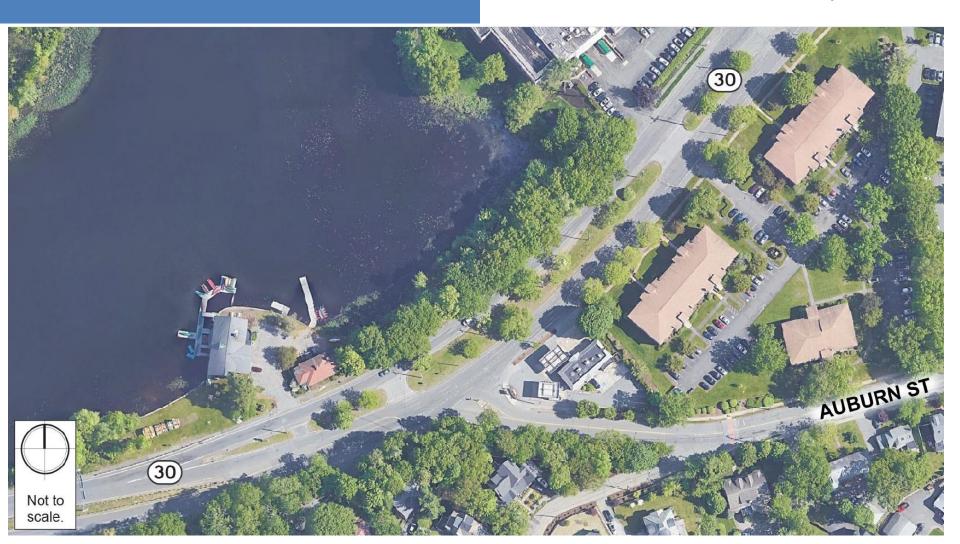
- Bridge Rehabilitation
- Safety
- Multimodal accommodations & connectivity
- Vehicular access & operations
- City vision





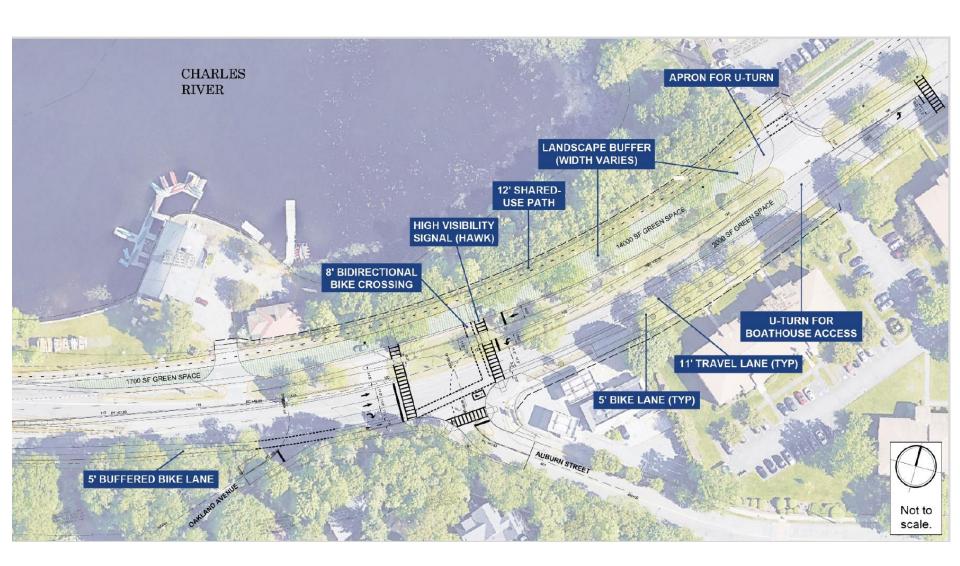
# **Existing Challenges**

- Safety
- Crossings
- Multimodal accommodations
- Speeding
- Network connectivity

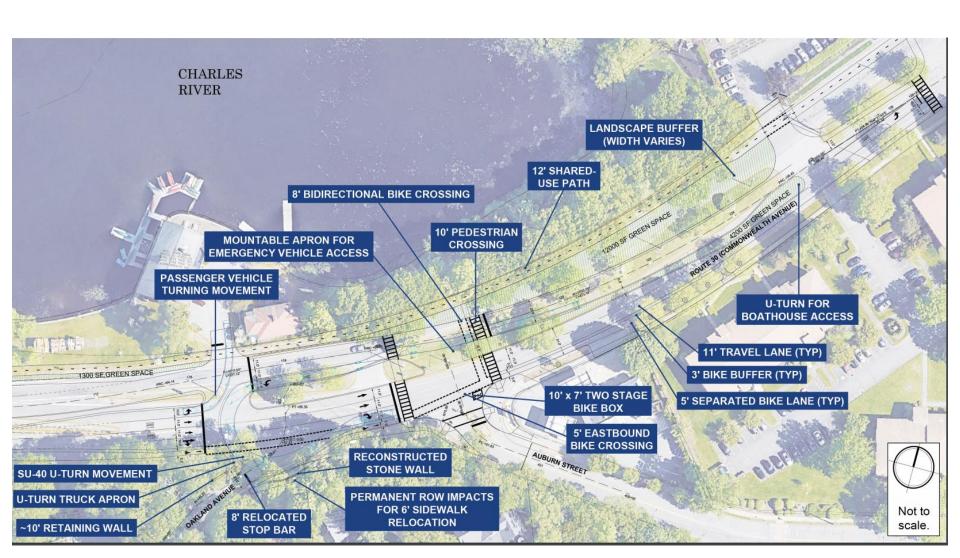


# 2. Alternatives Analysis

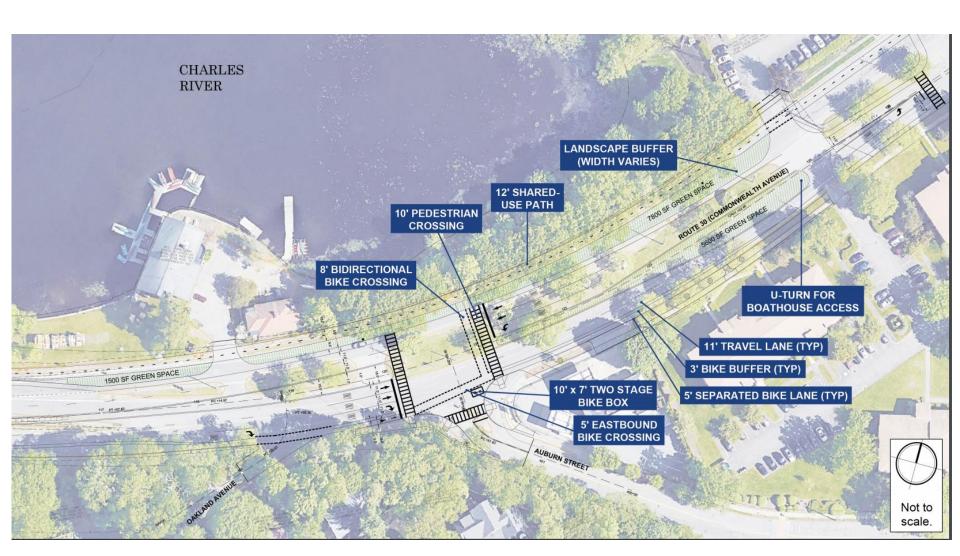
### **Continuous Green T- Intersection**



### **Displaced Left Turn**



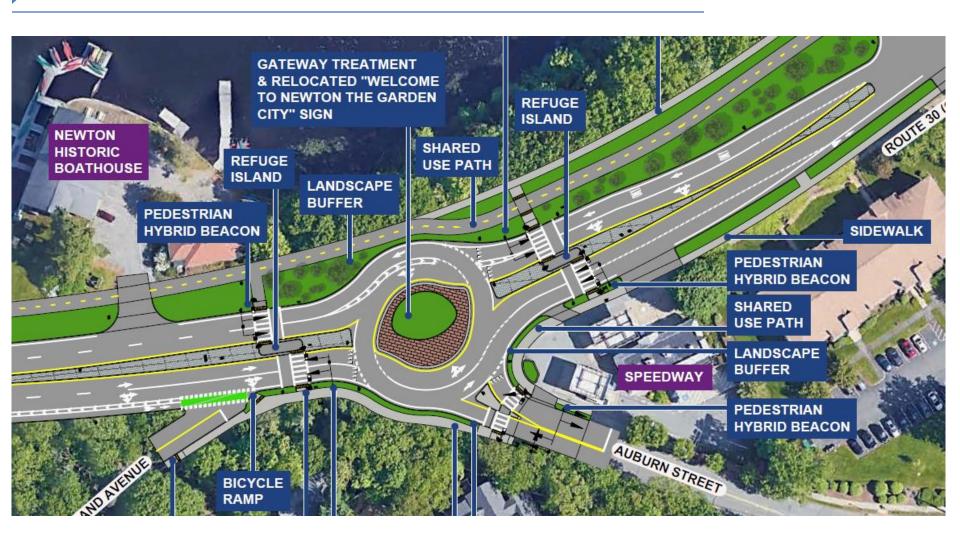
### **Traditional T - Intersection**



### Mixed Lane Modern Roundabout



### Mixed Lane Modern Roundabout



# **Alternative Comparison Matrix**

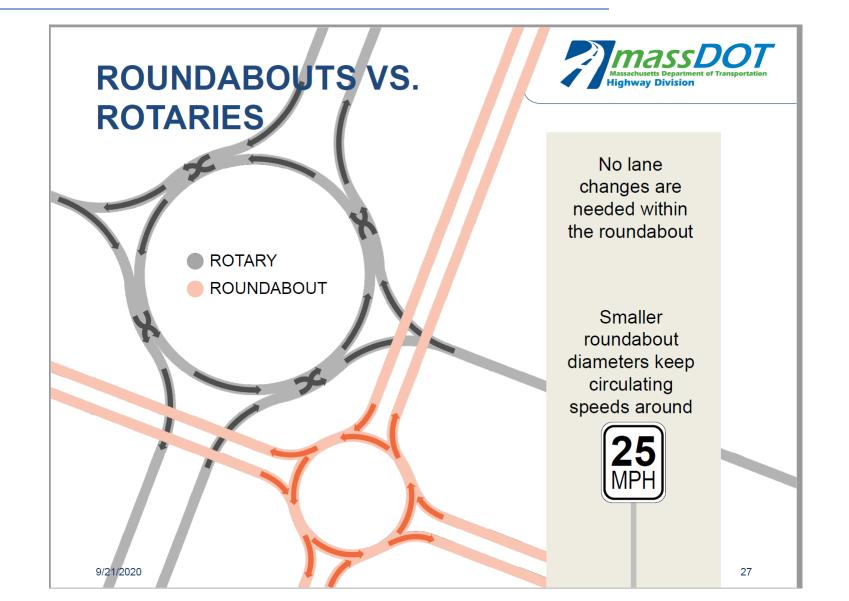
	No Build Condition	Traditional T- Intersection	Mixed Lane Modern Roundabout	Continuous Green T- Intersection	Displaced Left Turn	
Multimodal Accommodation s & Crossing Treatment	No APS or crossings across Comm Ave	Shared Use Path Shared or Separated Signalized crossings  Shared Use Path Shared Crossing with Pedestrian Hybrid Beacon (HAWK)  Shared Use Path Shared or Separated Signalized crossings		Path Shared or Separated Signalized	Shared Use Path Shared or Separated Signalized crossings	
Peak hour Intersection level of service	AM 23.2s PM 22.0s	AM 20.1s PM 17.7s	AM 27.5s PM 12.8s	AM 21.2s PM 17.6s	AM 21.4s PM 13.4s	
Route 30 westbound (Average) Max Queue Length(ft)	AM (12) 43 PM (26) 68	AM (245) #530 PM (162) 403	AM (0) 265 PM (0) 111	AM (0) #626 PM (0) #1132	AM (253) #560 PM (168) 461	
Route 30 eastbound (Average) Max Queues(ft)	AM (190) 383 PM (267) 467	AM (61) #396 PM (144) 297	AM (0) 60 PM (0) 47	AM (69) #483 PM (165)#450	AM (143) 293 PM (102) 291	
Intersection Green Space	Existing medians unusable space 18000 SF	14900 SF	20500 SF	17700 SF	17500 SF	
MassDOT Preference	Eliminate	Consider	Consider	Eliminate	Eliminate	
City of Newton Preference	Eliminate Eliminate		Consider	Consider	Eliminate	

# 3. About Roundabouts

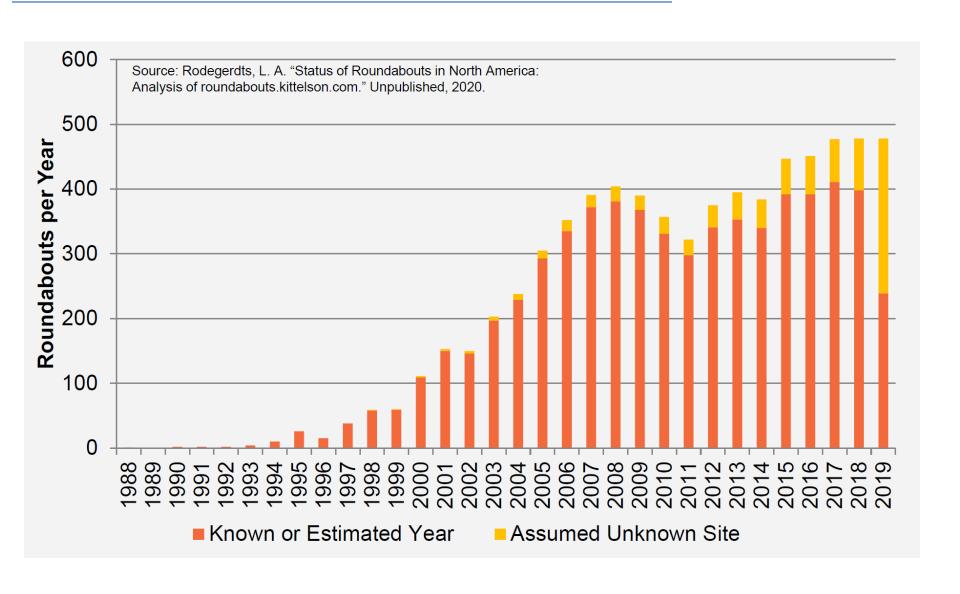
### Modern roundabouts are very different than rotaries



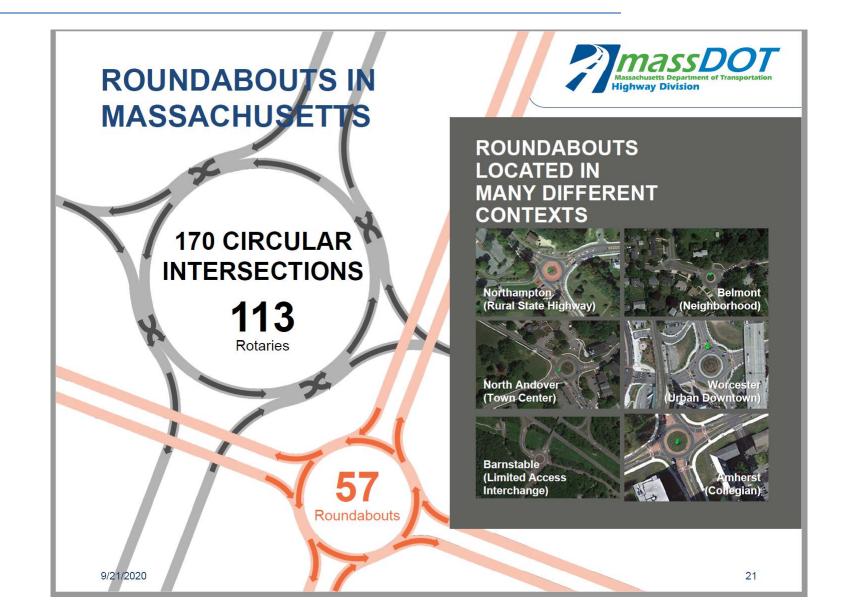
#### Modern roundabouts are smaller and safer than rotaries



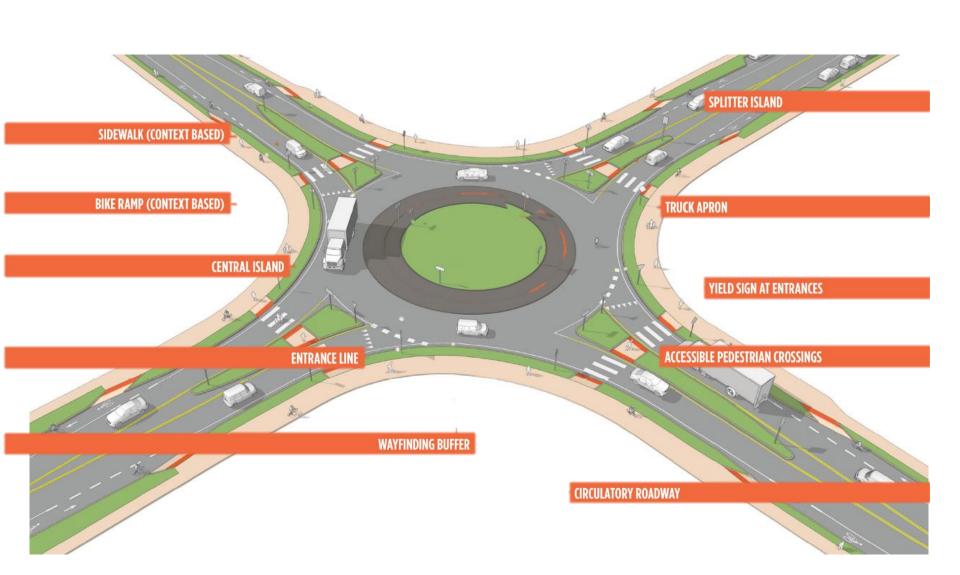
#### Newton will not be the first city to implement a modern roundabout



#### Newton will not be the first city to implement a modern roundabout



### The proposed roundabout follows established best practices



# 4. Preliminary Questions Answered

Question: Can you provide a simulation of the roundabout at <u>peak hour</u>? Answer: Yes. Please see below.





# VISSIM Video Simulations Roundabout

- https://youtu.be/z1oGaJXR-V0 (AM Peak)
- https://youtu.be/q76zInQNNPY (PM Peak)
- <a href="https://youtu.be/Lrqvl ZiPHY">https://youtu.be/Lrqvl ZiPHY</a> (Ped Close-up

### Continuos Green T-Intersection (Florida T)

- https://youtu.be/r-y -mwq14o (AM Peak)
- https://youtu.be/JGalhAiL170 (PM Peak)

Question: Are there examples of successful modern roundabouts handling similar traffic volumes?

Answer: Yes. Boylston St @ Lincoln St, Worcester, MA



Question: Are there examples of successful modern roundabouts handling similar traffic volumes ,cont'd?

Answer: Yes. Lake Ave @ South Ave, Worcester, MA

Figure 10. 2020 a.m. Peak Hour TMC

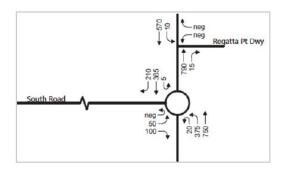
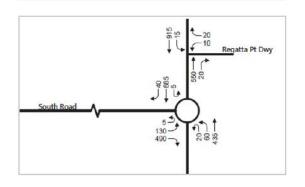
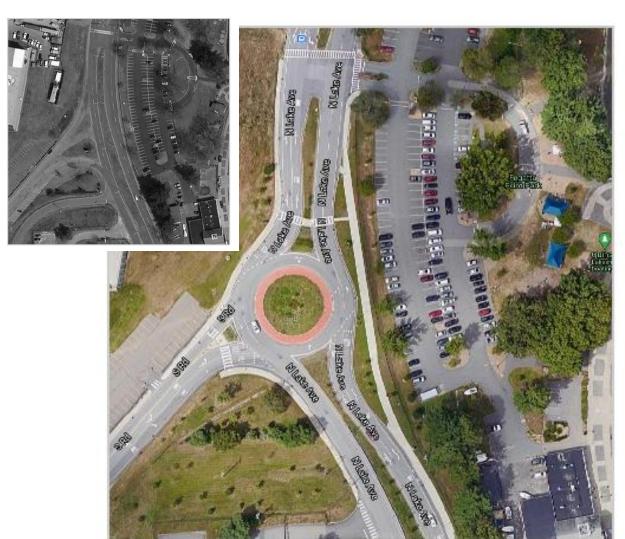


Figure 11. 2020 p.m. Peak Hour TMC





# Question: Is the roundabout safe, especially for kids? Answer: Yes.

# FEWER CONFLICT POINTS THAN SIGNALIZED INTERSECTIONS

75% fewer vehicle-to-vehicle conflict points

67% fewer vehicle-to-pedestrian conflict points

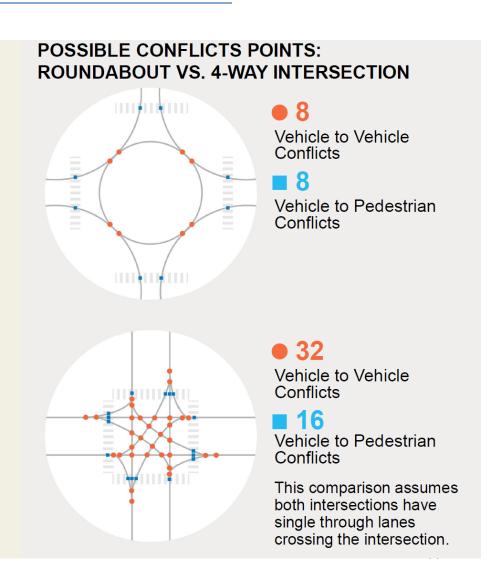
#### **LIVES SAVED**

reduction in fatalities

76% reduction in injury crashes

30-40% reduction in pedestrian crashes

10% reduction in bicycle crashes



# Question: Is the roundabout safe, especially for kids, cont'd? Answer: Yes.

#### Slower Vehicle Speeds (under 25 mph)

- Drivers have more time to judge and react to other cars or pedestrians
- Advantageous to older and novice drivers
- Reduces the severity of crashes
- Keeps pedestrians safer

#### LOWER SPEED

Lower speed is associated with better yielding rates, reduced vehicle stopping distance, and lower risk of collision injury or fatality. Also, the speed of traffic through a roundabout is more consistent with comfortable bicycle riding speed.



#### SHORTER, SETBACK CROSSINGS

Pedestrians cross a shorter distance of only one direction of traffic at a time since the entering and exiting flows are separated. Drivers focus on pedestrians apart from entering, circulating and exiting maneuvers.

Question: Is the roundabout safe, especially for kids, cont'd? Answer: Yes.

# Insurance Institute for Highway Safety

Roundabouts are a safer alternative to traffic signals and stop signs. The tight circle of a roundabout forces drivers to slow down, and the most severe types of intersection crashes — right-angle, left-turn and head-on collisions — are unlikely.

#### **AARP**

# AARP fact sheet supports roundabouts as safer for older drivers

- Require slower vehicle speeds
- Reduce collision severity
- Eliminate the need to make left turns in front of oncoming traffic

# Question: Can you implement a trial of the roundabout? Answer: Not recommended, based on the following

#### Required for Trial Construction

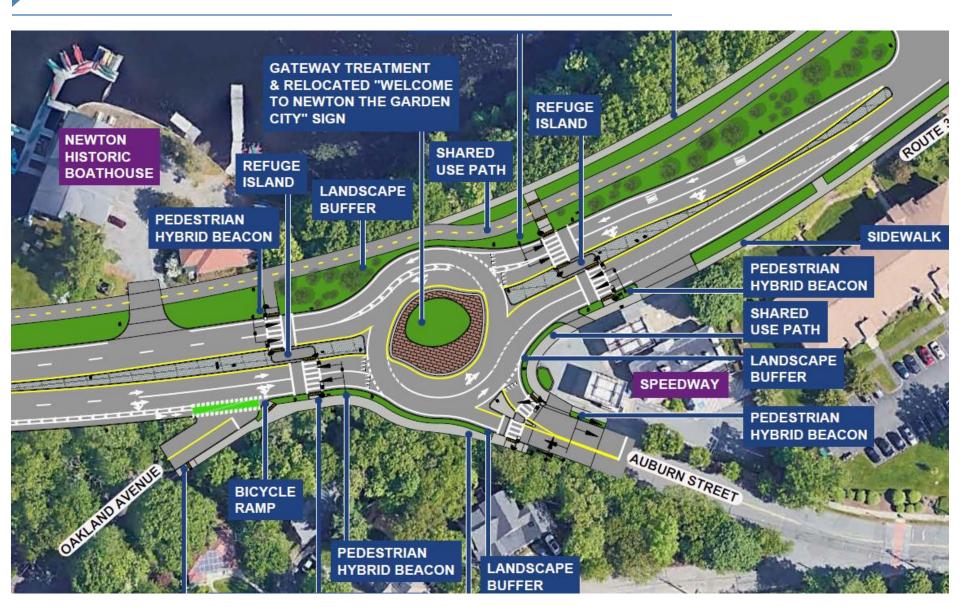
- 1. Excavation of landscaped medians and sidewalks
- 2. Relocation of 1 light pole and 3 utility poles by utility companies
- 3. Removal of up to 8 existing trees
- 4. Reconstruction of all accessible pedestrian ramps
- 5. Removal and replacement of existing signal equipment
- 6. Eradication of line striping
- 7. Temporary signage for wayfinding and operations
- 8. Variable message signs on all approaches
- 9. Coordination with conservation commission, local abutters, public

Temporary roundabouts provide less capacity and less safety than permanent configurations. They create more driver confusion and do not have full beneficial use of the planned pedestrian accommodations. It would not be a good demonstration of how the roundabout would work under permanent conditions

Question: Can you have a red pedestrian light at Auburn St? Answer: A pedestrian hybrid beacon is being considered



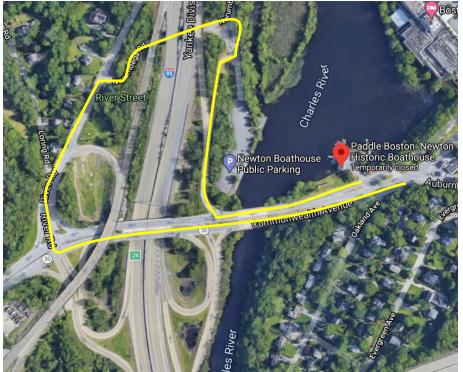
Question: How do bikes navigate the roundabout on the south side? Answer: Bikes will use a buffered bike lane to a shared use path.



Question: At the boathouse, where can buses wait for drop off/pick up? How do exiting vehicles travel east?

Answer: Evaluating using the grass buffer for buses. Vehicles heading east will exit west, then exit at the I95 NB on ramp to Nurembega Rd.





Question: How far west does the sidewalk or bike path extend? Answer: A shared use path continues west of the roundabout to Nurembega Road and the Boathouse parking lot



# 5. Timeline and Next Steps

# Timeline & Next Steps

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2.	City	Council Committee Presentation and Vote	1/20/2021
			_,

3. MassDOT 25% Design Hearing Likely 3/2021

4. Advertising Date Spring 2022

5. Construction Fall 2022- Summer 2025

# 6. Questions & Comments

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### City of Newton Carriageway Project

